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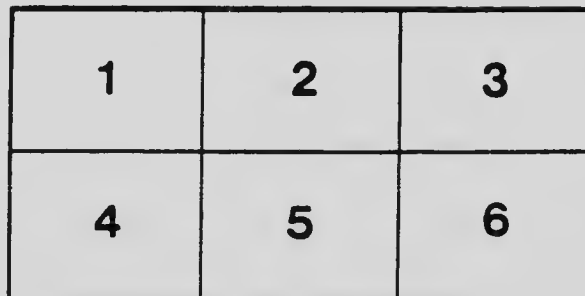
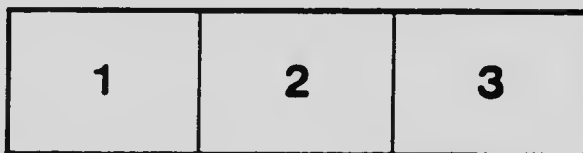
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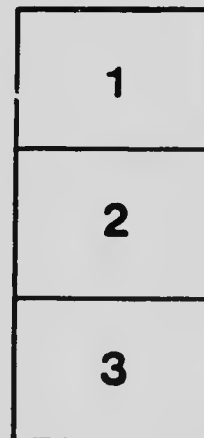
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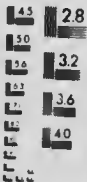
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REPORT
OF THE
CANADIAN ARCTIC EXPEDITION
1913-18

VOLUME IX: ANNELIDS, PARASITIC WORMS,
PROTOZOANS, ETC.

PART D: GEPHYREA

By RALPH V. CHAMBERLIN

SOUTHERN PARTY—1913-16



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Report of the Canadian Arctic Expedition 1913-18.

VOLUME IX: ANNELIDS, PARASITIC WORMS, PROTOZOANS, ETC.

Part A: OLIGOCHAETA.

Lumbriculidae. By Frank Smith.

Enchytraeidae, By Paul S. Welch.....(*Issued September 29, 1919*).

Part B: POLYCHAETA. By Ralph V. Chamberlin.....(*In press*).

Part C: HIRUDINEA. By J. P. Moore.....(*In preparation*).

Part D: GEPHYREA. By Ralph V. Chamberlin.....(*In press*).

Part E: ACANTHOCEPHALA. By H. J. Van Cleave.....(*Issued April 7, 1920*).

Part F: NEMATODA. By N. A. Cobb.....(*In preparation*).

Part G: TREMATODA. By A. R. Cooper.....(*In preparation*).

Part H: CESTODA. By A. R. Cooper.....(*In preparation*).

Part I: TURBELLARIA. By A. Hassell.....(*In preparation*).

Part J: GORDIACEA.

Part K: NEMERTINI.

Part L: SPOROZOA. By J. W. Mavor.....(*In preparation*).

Part M: FORAMINIFERA. By J. A. Cushman.....(*Issued February 6, 1920*).

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The Gephyrea collected by the Canadian Arctic Expedition, 1913-18.

By RAUF V. CHAMBERLIN

Museum of Comparative Zoology—Cambridge, Mass.

The collection embraces but four specimens of the Gephyrea, these having been taken from the stomachs of fish at two widely separated stations. All belong to one species, the widespread northern *Priapulus humanus* (Linné). In addition some other Gephyreans were received for study from the Geological Survey, and notes upon these are here included. They represent six species, the *Priapulus* mentioned above, and five Sipunculids, *Physcosoma aquosizi* (Keferstein), *Physcosoma pinacum* (Grube), *Phascolion strambi* (Montagu), a previously undescribed *Ascolosoma*, and *Phascolosoma crenata* (Sars).

PRIAPULIDAE.

Priapulus humanus (Linné).

1758. *Priapus humanus* LINNÉ. Syst. Nat., ed. 10, p. 656.

1766. *Holothurum priapus* LINNÉ. Syst. Nat., ed. 12, p. 1901.

1816. *Priapulus rotundus* LAMARCK. Hist. Nat. Anim. sans Vertéb., p. 77.

1845. *Priapulus hibernicus* MCCOY. Ann. Mag. Nat. Hist., ser. 1, 15, p. 272.

Two specimens were taken from the stomach of a nine and a half inch long female *Gymnuranthus pistilliger* Gill at Bernard harbour, Northwest Territories, June 14, 1916, at Station 49 f. The larger of these is 6 centimeters long, inclusive of the fully protruded proboscis and exclusive of the branchial filaments, with a diameter of 1.4 centimeters. The second specimen is only about 1.8 centimeters long. Two other small specimens were taken from a *Platyrurtes stellatus* Pall. at Grantley harbour, Alaska, July 31, 1913 (Station 20 d). Besides the specimens secured by the Canadian Arctic Expedition there is in the collection a fine specimen, 10 centimeters long, taken on the beach of Hudson bay at Fort Churchill, Keewatin, by James M. Macdonald, October, 1910.

SIPUNCULIDAE.

Phascolosoma hudsonianum, n. sp.

Type specimen.—Catalogue No. 101, Victoria Memorial Museum, Ottawa. One specimen.

Body proper, i.e., from the anus caudad, slenderly subpyriform, with a conspicuous pointed caudal appendage abruptly set off, anteriorly uniform in width with the proboscis. In the type the length to the tip of caudal appendage is 3.4 times the greatest width. Body about one and a half times the length of the proboscis. Body light brown, in general appearing shining and of a somewhat pearly lustre; but papillae are visible upon close inspection even with the naked eye over the entire surface, the papillae obviously densest at caudal end and over the narrow appendage and near level of end just in front of the anus where also the skin is more obviously reticulate; still more strongly rugose on caudal surface. Papillae subconic with base broad. No hooks present on the pro-

boscis, the latter more rugose toward tentacles. Tentacles in several rows. Openings of segmental organs distinct. Body wall thin, in part translucent, the inner surface with pearly lustre, muscle layer uniform, with no trace of division into strands. Four retractor muscles present, of which the dorsals are very much more slender posteriorly than the ventrals; ventrals taking their origin about midway between anus and caudal tip of body and the dorsals about five-twelfths the distance from anus to level of origin of ventrals. Segmental organs elongate, free, opening near level of anus. Coils of intestine numerous, wholly free excepting anteriorly. Total length of type, inclusive of extended proboscis, 116 mm.; of body proper from anus to caudal tip 70 mm.; distance from anus to tentacles, 46 mm. Greatest width 17 mm.; width at level of anus, 7.3 mm. Length of caudal appendage, 7 mm.; width at base, near 3.6 mm.

LOCALITY. Hudson Bay: Fort Churchill, October, 1910. James M. Macom. One specimen.

Phascolosoma eremita (Sars)

1851. *Sipunculus eremita* Sars, Nyt. Mag. for Naturvidensk., p. 197.

1865. *Sipunculus (Phascolosomum) borealis* QUATREFAGES, Hist. nat. Anneles, 2, p. 620.

1867. *Phascolosoma boreale* KEFERSTEIN, Nach. d. k. Ges. d. Wiss. Göttingen, No. 7, p. 206.

1877. *Phascolosoma eremita* KÖREN and DANIELSSON, Fauna litt. Norvegie, 3d Heft., p. 134 pl. 15 f. 45.

A form widespread in northern regions, having been recorded at various stations from Greenland eastward to the Kara sea, the range extending southward along the European coast to the North sea and along the North American coast to Massachusetts or in deeper water even farther south (40° N. lat.) A specimen was collected by the biological launch *Prince* at Station 4, in Passamaquoddy bay, N.B., October 8, 1917, at a depth of 25 to 30 meters.

Phascolion strombi (Montagu).

1804. *Sipunculus strombus* G. MONTAGU, Trans. Linn. Soc. London, 7, p. 74.

1828. *Siphunculus dentatii* GRAY, Spicilegia zoologica, p. 8.

1841. *Siphunculus bernhardus* FORBES, Hist. British Starfishes, p. 251.

1843. *Siphunculus capitatus* H. RATKE, Nova Scotia Acad. Leop. Car. 29, p. 143, pl. 6, ff. 20-23.

1844. *Siphunculus (Phascolosoma) concharum* OERSTED, De regionibus marinis, p. 80; also Krøyer's Naturh. Tidskr., 1844, p. 419.

1865. *Siphunculus (Cryptosomum) caementarium* QUATREFAGES, Hist. nat. des Anneles, 2, p. 628.

1867. *Phascolosoma hamulatum* PACKARD, Mem. Bust. Soc. Nat. Hist. 2, p. 290.

1873. *Phascolosoma tubicola* VERRILL, Amer. Journ. Sci. and Arts, ser. 3, 5, p. 99.

1875. *Phascolion spitzbergense* THEEL, Bihang till k. Svenska Vet. Akad. Handl., 3, p. 16, pl. 1, ff. 2, 3.

A species widespread and abundant in the north Atlantic and Arctic regions. In the collection submitted for study is a number of specimens of this form collected by the biological launch *Prince* in Passamaquoddy bay, N.B. They were taken on a muddy bottom at a depth of twenty-five to thirty meters on October 8, 1917, and were found inhabiting shells of *Apporrhais occi-*

dentalis Beck and *Thais lapillus* Linné. Also several specimens apparently of this species but which unfortunately had become dried out through evaporation of the preserving fluid were found in tubes of *Cistenides granulata* in Dolphin and Union strait. (Canadian Arctic Expedition Station 43 a, b), September, 1915, 25 to 50 fathoms.

***Physcosoma japonicum* (Grube).**

1877. *Physcolosoma Japonicum* GRUBE, Jahresber. der Schles. Ges. Vaterl. Cultur, 54, p. 73.

1883. *Physosoma japonicum* SELENKA. Die Sipunculiden, p. 76, pl. 2, f. 18-19, pl. 10, f. 145-146.

A number of nicely preserved specimens of this species were collected by W. Spreadborough at Ucluellet on the west side of Vancouver island, British Columbia, in May, 1909. This species has been previously recorded, aside from the shores of Japan, from Mergui on the gulf of Bengal, Australia (Sydney), Fiji, and the Queen Charlotte islands, (See Hérubel, Mem. Soc. Zool. France, 1907, p. 218).

***Physcosoma agassizii* (Keferstein).**

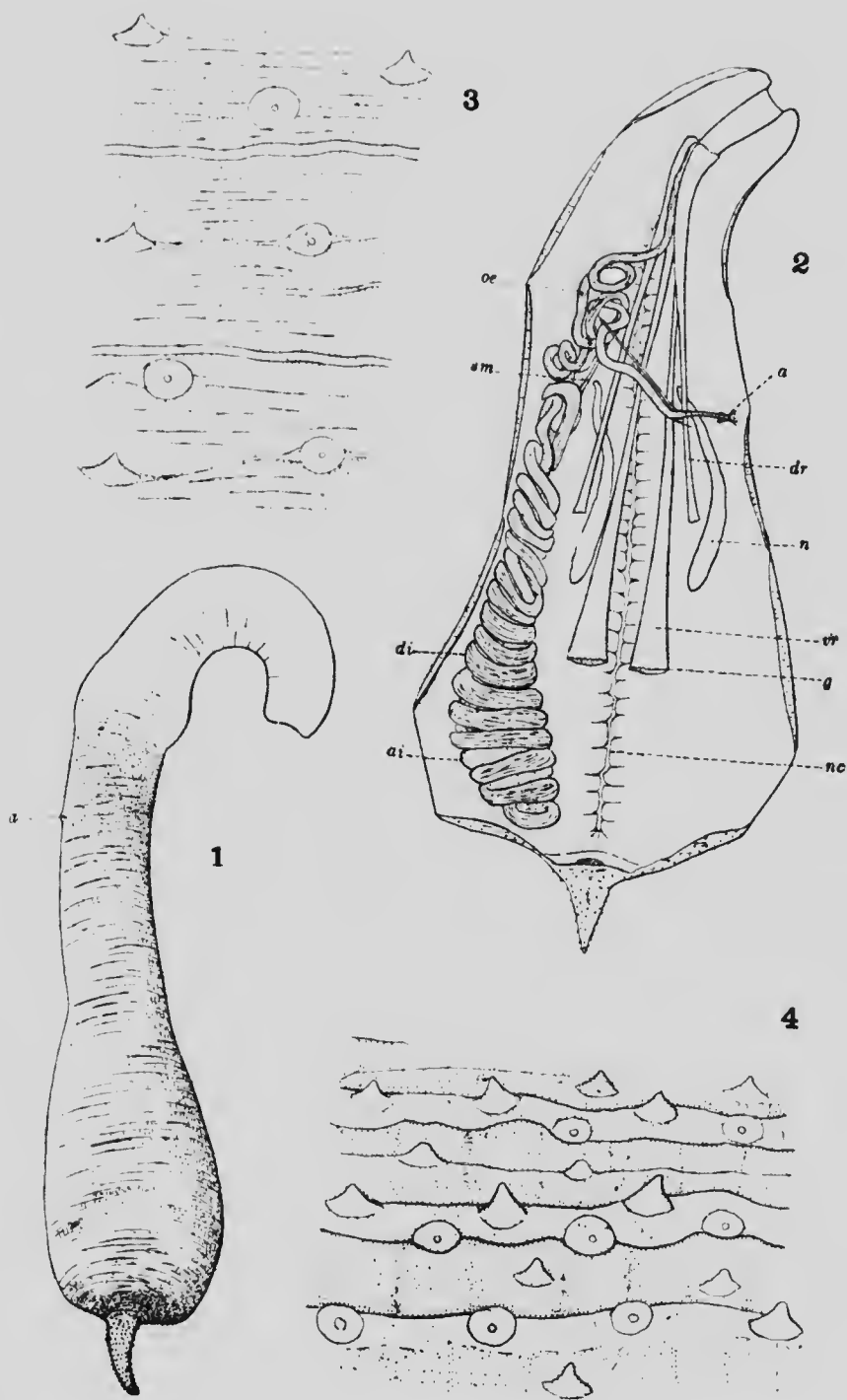
1866. *Physcolosoma agassizii* KEFERSTEIN, Nach. k. Ges. Wiss. Göttingen, p. 4.

A well preserved partly grown specimen of this species is in the collection transmitted for study along with that of the Canadian Arctic Expedition. The colour markings are exceptionally distinct, these consisting of large black pigment spots on the dorsal surface of the body and of parallel transverse stripes across the dorsal and upper lateral surface of the proboscis, those just proximal of the tentacles being deepest. The papillae and other external features are typical.

LOCALITY.—British Columbia: Queen Charlotte islands, Skidegate channel, low tide. 1910. Wm. Spreadborough, collector.

EXPLANATION OF PLATE.

- Fig. 1. *Phascolosoma hudsonianum*, n. sp. side view, distal end of proboscis retracted.
- Fig. 2. *Phascolosoma hudsonianum*, n. sp., dissection, dorsal view. a, anus; oe, oesophagus; di, descending coils of intestine; ai, ascending coils of intestine; sm, spiral muscle; dr, dorsal retractors; vr, ventral retractors; g, reproductive festoons; n, nephridia; nc, nerve cord.
- Fig. 3. *Phascolosoma hudsonianum*, n. sp., portion of skin about two centimeters from caudal end.
- Fig. 4. *Phascolosoma hudsonianum*, n. sp., portion of skin from caudal surface.



A BIBLIOGRAPHY OF THE GEPHYREA

- Abildgaard, P. E.
1789. Beschreibung zweier arten des Steinbohrers. Schrift. der Gesellsch. naturf. Freunde zu Berlin, 9, p. 133.
- Alder, J.
1860. Descriptions of a Zoophyte and two species of Echinodermata new to Britain. Ann. Mag. Nat. Hist., ser. 3, 5, p. 73-75, pl. 5. (Phascolosoma).
- Andrene, J.
1881. Zur Anatomie des Sipunculus nudus L. Zool. Anz., 4, p. 477.
1882. Beiträge zur Anatomie und Histologie des Sipunculus nudus. Zeit. f. wiss. Zool., 56, p. 201-258.
- Andrews, E. A.
1889. Reproductive organs of Phascolosoma gouldii. Zool. Anz., 12, p. 146.
1890a. Notes on the Body-cavity liquid of Sipunculus gouldii. Johns Hopkins Univ. Circular, p. 65.
1890b. Notes on the Anatomy of Sipunculus gouldii. Studies Biol. Lab. Johns Hopkins Univ., p. 389.
- Amundale, N., and Kemp, S.
1915. Fauna of Chilka Lake. The Echiuroidea of the Lake and of the Gangetee Delta. Mem. Ind. Mus., Calcutta, 5, p. 55-63.
- Appel, W.
1885. Beitrag zur Anatomie und Histologie des Priapulid caudatus und des Halterypus spinulosus. Zeit. wiss. Zool., 42, p. 159-529, pl. 15-17.
- Augener, H.
1903. Beiträge zur Kenntniss der Gephyreen nach Untersuchungen der im Göttingen zool. Museum befindlichen Sipunculiden und Echiuriden. Arch. Naturg., 69, pp. 297-371, pl. 16-20.
1906. Westindische Polychaeten. Blake reports, 12. Bull. M. C. Z., 13, p. 193-196, pl. 8.
- Baird, W.
1868. Monograph of the Species of Worms belonging to the subclass Gephyrea. Proc. Zool. Soc. London, p. 77-114, pl. 9-11.
1870. Description of some new species of Annelida and Gephyrea in the collection of the British Museum. Journal of the Linn. Soc., London, p. 97.
- Baltzer, F.
1912. Über die Entwicklungsgeschichte von Bonellia. Verh. deutsch. zool. Ges. Vers., 22, p. 252-261, 10 fig.
1911. Entwicklungsgeschichte und Metamorphose des Echiurus. Verh. schweiz. nat. Ges., Tl. 2, p. 208-212.
- Barbut, J.
1783. Genera Vermium.
- Benham, W. B.
1904. The Sipunculids of New Zealand. Trans. and Proc. New Zealand Inst., 36, p. 172-181.
1905. Further notes on the Sipunculids of New Zealand. Op. cit., 37, p. 301-308.
1912. Invertebrates from the Kermadec Is. Trans. and Proc. New Zealand Inst., 11, p. 135-138.
- Bianchi, G. (Turnus Plancus)
1760. De Conchis minus not.
- Blainville, H. M. D. de.
1827. Diet. sci. nat., Vers., 49.
- Blanchard, E.
1849. Recherches sur l'organisation des Vers, Ann. sci. nat., ser. 3, 12.
- Bledowski, R.
1910. Beiträge zur Kenntniss des Bonellia viridis und der Phylogenie einiger Coelhelminthen, Vöclavcek. Bern phil. Dissert. p. 1-69.
- Bohadsch, J. B.
1761. De quibusdam animalibus marinis Liber. Dresden, 4, cap. 5, p. 93-97, pl. 7, f. 6-7.
- Bose, L. A. G.
1802. Hist. nat. des Vers, 2.
- Bouvier, E. L.
1894. Un nouveau cas de commensalisme: association d'Aspidosiphon avec des polypiers madréporaires et un Mollusque bivalve. C.R. Acad. sci. Paris, p. 95.
- Brandt, A.
1835. Prodröm. descript. animal. a Mertensio observat., Fasc. 1, p. 62 (also in Lanarek, Anim. s. vertebr., ed. 2, 3, p. 472).
1870. Anatomisch-histologische Untersuchungen über den Sipunculus nudus L. Mem. de l'Acad. impér. de St. Petersburg, ser. 7, 17.
- Bruguère, J. G.
1791. Encyc. method.

- Brant, E.
1897. Quelques faits relatifs à l'histoire du Phascolien *Stromb. Montagu*. Arch. zool. expér. et génér., ser. 3, 5, p. 483.
- Bureau, L.
1898. Coup d'oeil sur la faune du département de la Loire-Infér. Nantes et la Loire-Infér.; II, Session de Nantes du Congrès de l'Asso. française Avanc. des Sci. II et III, p. 15.
- Baytendyk, F. J.
1909a. Zur Physiologie der Urmien von *Sipunculus nudus*. Biol. Centralbl., 29, p. 365-369.
1909b. Beiträge zur Muskelphysiologie von *Sipunculus nudus*. Biol. Centralbl., 29, p. 753-759.
- Capobianco, F.
1900. Della influenza di agenti fisico-chimici sovra la eccitabilità dei nervi e dei muscoli lisci negli invertebrati: Ricerche sperimentali. Rend. Acc. Napoli ser. 3, 6, p. 237-239.
- Carus, C. G.
1863. In Handbuch der Zoologie von Peters, Carus und Gerstaecker, p. 150.
1881. Prodronus faunae mediterraneae sive descriptio animalium maris mediterraneae incolarum. Pars I.
- Catta, J. D. (and Marion)
1875. Du male planariforme de la Bonellie. Revue Sciences nat. de Dubreil, I, no. 3, p. 313-319, pl. 7. (Transl. of Russian article by Kowabvsky, 1870, w. additions by Marion.)
- Chamberlin, R. V.
1919. Notes on the Sipunculids of Laguna Beach. Panama Coll. Jour. of Ent. & Zool. (Adv. Reprint from Mar., 1920, issue, Aug., 1919, p. 30-31).
- Chatouso, A. de, and Eysenhardt, C. G.
1821. De animalibus quibusdam e classe vermium lineata, etc. Nov. Act. Phys. Med. Acad. C. L. C. naturae curiosorum, 10, p. 343-374.
- Chiari, S. delle.
1823. Mem. sulla Storia e Not. degli Animali senza Vertebr.
1828. Su la notomia e la classificazione del Sifunculo nudo di Lucaco. Atti del R. inst. d'Incoraggiam. alle Sc. nat. di Napoli, 4.
- Claparede, E.
1861. Beitrag zur Kenntniss der Gephyrea. Müller's Archiv f. Anat. und Physiol.
1863. Beitrag zur Kenntniss der Geschlechtsverhältnisse bei den Sipunculiden. Beobacht. über Anat. u. Entwicklungsgeschichte wirbell. Thiere.
- Collin, A.
1891. Über *Echiurus chilensis* Max Müller. Zool. Anz., 14, p. 463-464.
1892. Gephyreen gesammelt von Herrn Stabarzt Dr. Sander während der Reise S.M.S. "Prinz Adalbert." Archiv Naturg., 58, p. 130.
1901. Die Gephyreen der deutschen Expedition des S.M.S. "Gazelle." Archiv Naturg., 67 (Festschrift), p. 299.
- Com, H. W.
1886. Life History of *Thalassema* Stud. Studies Biol. Lab. Johns Hopkins Univ., 3, p. 351-401.
- Costa, A.
1869. Di un nuovo genere di *Chetognati*, and Di un genere di *Sipunculoidi*. Ann. del Mus. zool. d. R. Univ. di Nap. (1865), 5, p. 54-57, pl. 3.
1853. Fauna del Regno di Napoli. Echinodermi apodi, p. 17-20, pl. 2.
- Coupin, H.
1903. Les Gephyriens. La Nature, 31, p. 91-92, 1 f.
- Cuenot, M. L.
1889. Formation des Produits Génitaux par les Glandes Lymphatiques (Invertébrés). C.R. Ass. Fr. Sci., 1889, 2, p. 581-586 (Gephyr., p. 583-584).
1891. Etudes sur le sang et les glandes lymphat., (2e partie). Archiv. Zool. expér. et gén., (2), 9, p. 593.
1897. Les globules sanguins et organes lymphoïdes des Invertébrés. Archiv. Anat. microsc., 8, p. 153.
1900. Le Phascolosome commun (Phascolosoma vulgare de Blainville). Zool. descriptive. O. Doim. Paris.
1902a. Organes agglutinants et Organes cilio-phagocytaires. Archiv. Zool. expér. et gén., ser. 3, 9, 10, p. 79.
1902b. Contrib. a las faune du bassin d'Arcachon; Echiuriens et Sipunculien. Bull. Soc. scient. d'Arcachon. Stat. biol.
1913. Excretion et phagocytose chez les sipunculien. C.R. Soc. Biol. Paris, 74, p. 159-161.
- Cuvier, G.
1805. Leçons d'anatomie comparée.
1830. Règne animal, ed. 2, 3.
- Danielssen, D. C.
1861. Beretning om en Zool. Reise 1857. Nyt. Magaz. f. Naturvid.

- Danielssen, D. C., and Koren, J.
1880. Fra den Norske Nordhavs expedition (Gephyreen). *Nyt Maag f. Naturvid.*, 26, p. 11-66, 1 pl.
1881. Den Norske Nordhavs expedition (1876-1878). *Gephyrea*.
- Debye, T., et Herouard, E.
1897. *Traité de Zoologie concrète*, 5, Les Vermidiens.
- Diesing, C. M.
1854. *Systema Ichthyofaunae*, vol. 2.
1858. *Icon Zoograph.* Ferdinand I, Emperor.
1859. Revision der Rhyngelosen. *Sitzungsber. Akad. Wiss. Wien math-naturw. Kl.*, 37.
- Dogiel, V. A.
1916. Sur la Fonction des "A. seules énigmatiques" du sang de *Sipunculus nudus*. *Rev. zool. russe.*, 1, p. 6-8.
- Drasche, R. von.
1880. Zur Kenntniss des Baues der Segmentalorgane bei Echiuren. *Zool. Anz.*, 1, p. 517-519.
1881. Über eine neue Echiurus-Art aus Japan nebst Bemerk. über *Thalassema erythrogastrum* I. et. kart von der Insel Bourbon. *Verh. z. B. Ges. Wien.*, 30, p. 621-628, pl. 29.
- Duben, M. W., vca.
1841. Norges Echinodermier. *Öfvers. af K. Vet. Akad. Forh.*
- Dubois, R.
1907. Action de la lumière sur le pigment fluorescent de *Bonellia viridis* et croissance de pigment par certains vers marins exposés à la lumière solaire. *CR. Soc. Biol. Paris*, 62, p. 654-655.
- Dujardin, F.
1846. In: Lamarck, *Anim. s. vert.*, 3.
1840. *Id.*, ed. 2, 3.
- Edwards, Milne.
1840. *Régne animal, Zoophytes*, pl. 21, f. 3-5.
1870. *Leçons sur la Physiologie et l'Anatomie comparée*.
- Ehlers, E.
1861a. Über *Halieryptus spinulosus*. *Zeit. wiss. Zool.*, 11, p. 205-252.
1861b. Über d. Gattung *Prionopus*, op. cit., 11, p. 401-413.
1871. On the Vermes collected by Mr. von Heughlin in the Sea of Spitzbergen. *Ann. nat. Hist.*, 8, p. 53.
- Eisig, H.
1890. Biologische Studien angestellt in der zool. Stat. Neapel. Kosmos, v. Ausdehnbarkeit des *Bonellia*-Rüssels, 13, p. 128-129.
- Embleton, A. L.
1900. On the Structure and Affinities of *Echiurus uncinatus*. *Trans. Linn. Soc. London*, (2), *Zool.*, 8, p. 77-97, 4 pls., 1 f.
- Enriques, P.
1902. Note fisiologica sur *Sipunculus nudus*. (*Unione zool. ital.*). *Monit. zool. ital.*, 13, Suppl., p. 51-52.
1903. I corpi pigmentati del *Sipunculus nudus*. *Arch. zool. Napoli*, 1, p. 253-287, 1 pl.
1906. Sur les vaisseaux du *Sipunculus nudus*. *Arch. Zool. exper. (B)*, 1, p. xxiii-xxvi.
- Fabre-Dumérque.
1887. Sur l'Infusoire Parasite de la cavité générale de *Sipunculus nudus*. *CR. Ass. Fr. Sci.*, 1886, pt. 2, p. 593-596, pl. 13.
- Fabricius, O.
1780. *Fauna Groenlandica*.
- Farran.
1851. *Thalassema neptuni*. *Ann. Mag. Nat. Hist.*, ser. 2, 7, p. 156.
- Farran, G. P.
1915. Results of a biol. survey of Blacksod Bay, Co. Mayo. *Fisheries Ireland. Sci. Investig.*, No. 3, p. 1-72.
- Ferroniere, G.
1901. Etudes biol. sur la faune supralittorale de la Loire-Infér. *Bull. Soc. Sc. nat. de l'Ouest*.
- Fischer, W.
1892. Übersicht der von Herrn Dr. F. Stuhlmann auf Sansibar und an der gegenüberliegenden Festlandes Küste gesammelten Gephyreen. *Jahrb. wiss. Anst. Hamburg*, 9, p. 11.
1893. Weitere Beiträge zur Anatomie und Histologie des *Sipunculus indicus* Peters. *Jahrb. Hamburg. Anat.*, 10, p. 1-12, 1 pl.
1894. Über kienentartige Organe einiger *Sipunculus*-Arten. *Zool. Anz.*, 17, p. 333-335.
1895. Des Gephyriens du Muséum d'histoire naturelle de Hambourg. *Abh. Nat. Ver. Hamburg*, 13, no. 1, p. 24.
1896a. *Ergeb. Hamburg. Magalhaens. Sammelreise*, 1, Gephyreen, p. 75.
1896b. Gephyreen, in *Seinen's Zool. Forschungsreise in Australien und dem Malayischen-Archipel*, 5, p. 3.

- Fischer, W. -*Concluda*
 1913. Über einige Sipunculiden aus naturhistorischen Museen zu Hamburg. Mitt. nat. Mus. Hamburg, Jahrb. 30, Beih. 2, p. 93-101, 1 pl.
 1914a. Die Sipunculiden der Nord- und Ostsee unter Berücksichtigung von Formen des Nordatlantischen Gebietes. Wiss. Meeresunters. Kiel, n.s., 16, p. 85-127, pl. 1.
 1914b. Gephyrea, in Beitr. z. Kenntn. d. Meeresfauna Westafrikas. Lief. 1, p. 57-81, pl. 2.
 1916. Die Gephyreenausbeute der Deutschen Tiefsee-Exped. (1898-1899) (Vorl. Mitt.) Zool. Anz., 48, p. 11-20.
- Fuchs, R. F.
 1910. Die elektrischen Erscheinungen am glatten Muskel. Arch. ges. Physiol., 136, p. 65-100, 2 pl.
- Fleming, J.
 1828. A history of British Animals.
- Florentin, R.
 1902. On Cuenot's paper on "Org. agglutinants et org. élio-phagocytaires," Arch. Zool. exper., ser. 3, 10, p. 79-99; and Année Biol., 7, p. 331-335.
- Forbes, E.
 1841. A history of British Starfishes, p. 263.
- Forbes, E., and Goodson, J.
 1841. On the natural history and anatomy of *Thalassoma* and *Echiurus*. Edinburgh New Philos. Journ., 30, pl. 7.
- Frey, H. and Leuckart, R.
 1847. Beiträge zur Kenntniss wirbelloser Thiere, p. 40-45. (R. Wagner's Lehrbuch der Zoologie, 2.).
- Gadd, G. G.
 1911. Verzeichnis der Gephyreen des Kola-Golfes und Zwei neue Species der Phascosoma. Trans. soc. Nat. Cr. sciences St. Petersb., 42, p. 79-93 (German resume, p. 102-105), pl. 1.
- Gadeu de Kerville, H.
 1894. Recherches sur les faunes marine et maritime de la Normandie, 1er voyage; Région de Granville et des îles Chausey. Bull. Soc. des Amis des Sc. nat. Rouen, 1er Semestre.
- Geddes, P.
 1879. Sur le chlorophylle animale, etc. Archiv. zool. exper., p. 58.
- Gerould, J. H.
 1900. Observations upon the Development of *Phascosoma*. Science, n.s., 11, p. 473-474.
 1903. Studies on the Embryology of the Sipunculidae. I. The Embryonal Envelope and its Homologue. Mark Anniv. Vol. p. 437-452, 1 pl.
 1904a. A key to the Development of *Sipunculus nudus*. Amer. Natural., 38, p. 493-494.
 1904b. The Development of *Phascosoma*. Archiv. Zool. exper. et gen. (4), 11. Notes et review, No. 3, pp. xxv-xxix.
 1906. The Development of *Phascosoma*. (Studies on the Embryology of the Sipunculidae, 11). Zool. Jahrb., Abth. Anat., 23, p. 77-162, pl. 1-11.
 1908. A comparison of the Cephalic Organs in Certain Sipunculids. Sci., n.s., 27, p. 488-489.
 1913. The Sipunculids of the Eastern Coast of North America. Proc. U.S. Nat. Mus., 44, p. 373-437, 5 pls., 16 f.
- Gineste, Ch.
 1901a. Quelques particularités des Sipunculides. Actes Soc. Linn. Bordeaux, 56, p. clxxxv.
 1901b. Sur les vésicules énigmatiques de la cavité générale du *Phymosoma granulatum*. Procès verb. Soc. Linn. Bordeaux, 56, p. xxxi.
 1903a. Quelques caractères physiologiques des urnes Sipunculides. Actes Soc. Linn. Bordeaux, 57, p. xxiv-xxvii.
 1903b. Sur la structure histologique des canaux oesophagiens du Siponcle. Op. cit., 58, p. cix-cxxii, 1 f.
 1903c. Quelques observations sur les vésicules énigmatiques de la cavité générale du Siponcle. Op. cit., 58, p. clxxviii-clxxi, 1 f.
 1903d. Etude des urnes libres de la cavité générale du "*Sipunculus nudus*," Op. cit., 58, p. clxxiv-clxxxiv, 2 f.
- Gmelin, J. F.
 1780. Linné Syst. Nat. 6.
- Goodrich, E. S.
 1909. Notes on the nephridia of *Diophris* and of the larvae of *Polygordius*, *Echiurus* and *Phoronis*. Quart. J. Microsc. Sci. London, 54, p. 41-118, pl. 8.
- Gosse, P. H.
 1853. Rambles of a nat. on the Devonshire Coast. Notes on new or little known marine animals, Ann. Mag. Nat. Hist., ser. 2, 42, p. 124-128.
- Gräber, V.
 1873. Über die Haut einiger Sternwürmer. S.B. Akad. wiss. Wien., 67, p. 61-78, 3 pl.

- Gräf, L.
1875. Anatomie des Chaetoderma nitidulum Lovén. *Zeit. wiss. Zool.* 26, p. 166-192, pl. 11-13.
- Gruy, J. E.
1828. *Spieil. Zool.*
- Grœf, R.
1872. Über die borstentragenden Gephyreen. *Sitzungsber. der Ges. ges. Naturw.* 24. Marburg, no. 6.
1871. Über die Organisation der Echiuriden. *ibid.*, no. 2.
1877. Über den Bau und die Entwicklung der Echiuren. *ibid.*, no. 4, p. 48. — also *Archiv f. Naturg.*, 43, p. 343-353.
1879. Über den Bau der Echiuren. *ibid.* no. 1: *Archiv. naturg.*, 46, p. 88-93.
1879. Die Echiuren (Gephyrea armata). *Nova Act. Leop. Carol.* 41, 172 p., 9 pl.
1880. Die Organisation des Echiurus Pallasii. *Zeit. wiss. Zool.*, 31.
- Grieg, J. M.
1907. Invertebres du fond, Gephyriens. In Duc d'Orleans, *Croisiere oceanog. dans le mer du Grönland* 1905, p. 519.
- Griffin, B. B.
1896. The history of the Achromatic Structures in the Maturation and Fertilization of *Thalassema*. *Trans. N.Y. Acad. Sc.*, 15, p. 163-176, 3 pl.
1899. Studies in the Maturation, Fertilization and Cleavage of *Thalassema* and *Zirpaca*. *Jour. Morphol.*, 15, p. 583-634, pl. 31-34.
- Griffith, J. E.
1831. *Animal Kingdom*, 12. *Zooph.*
- Griffiths, A. B.
1892a. On the blood of the Invertebrata. *Proc. Royal Soc. Edinb.*, 19, p. 150.
1892b. L'Hémerythrine, C. R. *Acad. Sc. Paris*, 115, p. 669.
- Grube, E.
1837. Versuch einer Anatomie des *Sipunculus nudus* L. *Müller's Arch. f. Anat. u. Physiol.*, p. 237-257.
1840. Aktinen, Echinodermen u. Würmer des Adratischen u. Mittelmeeres.
1869. Mitth. über St. Vaast-la-Houge und seine Meeren, besonders seine Annelidenfauna. *Abh. schles. Ges.* 1868-1869, p. 91-128, pl. 2; and *ibid.* 1869-1872, p. 75-146, pl. 1 and 2.
- Grube, E. and Oersted, A. S.
1859. *Annulata Oerstediana*. *Vidensk. Meddel. naturhist. Foren. Kjøbenhavn. for 1858*.
- Gruvel, A.
1899. Sur quelques stations Zool. de la Méditerranée. *Mem. Soc. Bordeaux*, v. p. 31-33.
- Gruvel and Kunstler. — See Kunstler.
- Guerne, J. de.
1886. Sur les Gephyriens de la famille des Priapulides recueillis par la mission Cap Horn. *C.R. acad. Sci.*, 103, p. 760-762.
- Guérin-Ménéville, F. E.
1829-33. *Iconographie du règne animal de G. Cuvier*, 6.
- Haeckel, E.
1878. Die Kometenformen der Seesterne u. der Generationswechsel der Echinodermen. *Zeitsch. wiss. Zool.*, 30, suppl., p. 424.
- Haecker, V.
1898. Die pelagischen Polychaeten und Achaeten-Larven der Plankton-Exped. *Ergeb. Atlant. Ocean. ausgef. Plankton Exped.* 11, Kieland. Leipzig.
1905. Berichtigung, betreffend eine Gephyreen-Larve. *Zool. Anz.*, 19, p. 334.
- Haller, B.
1889. Beiträge z. Kenntniss der Textur des Central-Nervensystems höheren Würmer. *Arb. z. Inst. Wien*, 8, p. 1-138, 5 pl. (Gephyrea, p. 90-102).
1890. Abstract of preceding article, *Jour. R. Mic. Soc.*, p. 177-179.
- Hammarsten, O.
1913. Beiträge zur Entwicklung von *Halicryptus spinulosus* (v. Siebold). *Zool. Anz.*, 41, p. 501-505, 3 f.
1915. Gephyreen von Madagascar ges. von W. Kaudern 1911-1912. *Arkiv f. Zoologi*, 9, Hft. 2, no. 10.
- Hatschek, B.
1881. Über Entwicklungsgeschichte von *Echiurus* und die syst. Stellung der Echiuridae (Gephyrei chaetiferi). *Arb. aus der zool. Stat. in Triest*, 1880, 3, H. 1, p. 45-79, pl. 4-6.
1883. Über Entwicklung von *Sipunculus nudus*. *Op. cit.*, 5, H. 1, p. 61-140, 6, pl.
- Heath, H.
1910. Pelagosphaera, a larval Gephyrean., *Biol. Bull.*, 38, p. 281-284.
- Herdman, W. A.
1897. Note on a new British Echiuroid Gephyrean, with remarks on the genera *Thalassema* and *Hamingia*. *Quart. Journ. mic. Sci.*, n.s., 40, pt. 3, no. 159, p. 367-384, 2 pl.

- Hérubel, Marcel A.
 1902a. Sur certains éléments péritoneaux du phascolosome *P. vulgare* de Blanville. *Bull. Soc. Zool. France*, 27, p. 105.
 1902b. Sur le cerveau du Phascolosome. *C.R. Acad. Sci. Paris*, 121, p. 1603.
 1903a. Sur la distribution et les affinités réciproques des Sipunculides. *Bull. Soc. Zool. France*, 28, p. 99-111, 1 f.
 1903b. Première contribution à la morphologie et physiologie comparées et à la biostatique des Sipunculides. *Op. cit.*, 28, p. 111-125, 2 f.
 1903c. Études histologiques et physiologiques sur les Géphyréens. *C.R. Acad. Sci. Paris*, 136, p. 971.
 1904a. Sur les Sipunculides nouveaux rapportés de la mer Rouge par M. Ch. Gravier. *Not. préliminaire*. *Bull. Mus. Hist. Nat. Paris*, p. 176-180, 4 f.
 1904b. Liste des Sipunculides et des Echiurales rapportés par M. Ch. Gravier du Golfe de Tadjourah. *Bull. Mus. Hist. Nat. Paris*, p. 562.
 1904c. Sur une nouvelle espèce du genre *Sipunculus*. *C.R. 5^e Congrès internat. de Zool. Berne*, p. 690.
 1904d. Sur les Priapulides des côtes occidentales de la Scandinavie. *Bull. Soc. Zool. France*, 29, p. 1 (100-109), 4 f.
 1904e. Sur quelques points de la morphologie comparée des Priapulides. *Bull. Soc. Zool. France*, 29, p. 126-129, 3 f.
 1905a. Sur un nouveau Siponcle de la collection du Muséum (*Sipunculus joubini* sp. nov.). *Bull. Mus. Hist. Nat. Paris*, p. 51-51, 3 f.
 1905b. Sur les productions tégumentaires des Sipunculides. *Bull. Soc. Zool. France*, 30, p. 90.
 1906a. Sur les Sipunculides rapportés par la Mission Charcot. *Bull. Mus. Hist. Nat. Paris*, p. 127.
 1906b. Sur une tumeur chez un Invertébré (*Sipunculus nudus*). *C.R. Acad. Sci. Paris*, 143, p. 979-981.
 1907. Recherches sur les Sipunculides. *Mem. Soc. Zool. France*, 20, p. 107-418, f. 1-107.
- Hilton, W. A.
 1917. The Central Nervous System of a Sipunculid. *Pomona College Jour. of Ent. and Zool.* 9, p. 30-35, 6 f.
- Horst, R.
 1881a. *Hemingia glacialis* sp. n., eine borstenlose Echiure. *Zool. Anz.*, 1, p. 148-150.
 1881b. Die Gephyrea gesammelt während der zwei ersten Fahrten des Willem Barents, 1. Echiurida. *Niederl. Arch. Zool., Suppl.* 2, 12 p., 1 pl.
 1882. Die Gephyrea. II. Priapulida and Sipunculid. (from W. Barents' Exped.). *Op. cit.* Suppl. 1-3, p. 13-10.
 1899. *Aspidosiphon cylindricus*, sp. n. *Notes Leyden Mus.*, 20, p. 195.
- Hutton, F. W.
 1879. *Phascolosoma annulata* and *Sipunculus litulentus*, sp. n. *Tr. N.Z. Inst.*, 12, p. 278.
- Hutton, W. K.
 1903. On the Anatomy of a Gephyrean: *Phascolosoma teres*, nov. sp. *Proc. Zool. Soc. London*, 1, p. 202.
- Ikeda, I.
 1904. The Gephyrea of Japan. *Jour. Coll. Sci. Japan*, 4, p. 3-86, pl. 1-4.
 1905. A Gephyrean collected by Prof. Deun at Manjuvodi, Southern Negros (Philippine Is.). *Annot. Zool. Japan*, 4, p. 169.
 1907. On three new and remarkable Species of Echiuroids. *Jour. Coll. Sc. Univ. Tokyo*, 21 Art. 8, 64 pp., 4 pl.
 1908a. Notes on a new Deep-sea Echiuroid, *Protobonellia mitsukurii*. *Annot. zool. Japan*, 6 p. 259-265, 4 f.
 1908b. A New Echiuroid (*Hemingia ijimai*) from the Sagami Bay. *Annot. zool. Japan*, 7, p. 61-68, 1 pl.
 1910. Notes on a Deep-sea Echiuroid, *Acanthohemingia shiplei* (n.g. and n. sp.), with Remarks on the Species *Hemingia ijimai*. *Quart. Jour. Micr. Sc.*, n.s., 56, p. 135-147, 1 pl.
- Jameson, H. L.
 1899a. *Thalassema papulosum* (Delle Chiaji), a forgotten Echiuroid Gephyrean. *Mittl. zool. Stat. Neapel* 13, p. 433-439, 1 pl.
 1899b. Contributions to the Anatomy and Histology of *Thalassema neptunae* Gaertner. *Zool. Jahrb. Abth. Anat.*, 12, p. 535-566, 3 pl., 1 f.
- Johnston, G.
 1833. Illustrations in British Zool. *Ann. Nat. Hist.*, 6, p. 232-235.
- Jourdain, S.
 1865. Recherches sur l'anatomie des Siponcles. *C.R. Ac. Sc.*, 40, no. 20, p. 1042.
 1867. Sur quelques points de l'anatomie des Siponcles. *C.R.*, Apr. 29, p. 871-875; and *Ann. Nat. Hist.*, 1867, 19, p. 442-443.

- Jourdan, E.
 1891a. Les corpuscles sensitifs et les glandes entomées des Gephyriens marins. *Ann. Sc. nat.* (7), 12, p. 1.
 1891b. Les corps jaunes des Echinodermes et des Gephyriens. *C.R. Assoc. franc. Avanc. Sc. Marseille* (2), pt. 1, p. 249, pt. 2, p. 537.
 1892. De la valeur du mot endothélium en anatomie à propos des cellules à cils vibratils de la cavité générale des Siponculiens. *C.R. Soc. Biol. Paris*, 1, p. 27.
- Kieferstem, W., and Ehlers, E.
 1860. Auszug aus den Untersuchungen über die Anatomie des Sipunculid. *Nachr. K. Ges. Wiss. Göttingen*.
- Kieferstem, W.
 1862a. Beiträge zur Kenntniss der Gattung *Plasmodosoma*. *Zeit. wiss. Zool.*, 12, p. 35-51, pl. 3, 4.
 1862b. Unters. über med. Seethiers-Kenntn. *Zeits. wiss. Zool.*, 12.
 1865. Beiträge zur anatomischen und systematischen Kenntniss der Sipunculiden. *Zeit. wiss. Zool.*, 15, p. 101-115, pl. 31-33; and *Nachr. K. Ges. Wiss. Göttingen*, p. 189-200.
 1866. Untersuchungen über einige amerikaischen Sipunculiden. *Nachr. K. Ges. Wiss. Göttingen*, p. 215-228.
 1867. Same Article as preceding. *Zeit. wiss. Zool.*, 17, p. 11-55, pl. 6.
- Kesteven, H. L.
 1903. A new species of *Dendrostroma*. *Rec. Austral. Mus.*, 7, p. 105.
- Knulle, E. M.
 1917. Notes on the Bottom Environment of the Marine Invertebrates of Western Nova Scotia. *Ottawa Naturalist*, 39, No. 12, p. 150.
- Knulle, E. M., and Whittaker, E. J.
 1918. Bathymetric Check-List. Mar. Invert. E. Canada. *Contrib. to Can. Mar. Biol.*, Sess. Paper 384. Ottawa, 1918, p. 210.
- Kulповича, H.
 1891. Ochet ob ekokursu na Solovetzki biologicheskuyu iantziyu lyetom 1890 gloda (Report on a Biol. excursion to Solovetzki, Priapulsk, p. 21 and 10). *Trudni St. Petersburg Est.*, 1891, 22, 1.
- Koren, J., and Danielsen, D. C.
 1875. Bidrag til de norske Gephyreers Naturlustorie. *N. Mag. Natu.v.*, 21, p. 28.
 1877. Fauna littoralis Norvegiae; Contribution to the natural history of the Norwegian Gephyrea. *Christiania*.
- Kowalevsky, A.
 1870. Planariforme mûle of *Bonellia viridis*. (In Russian; for transl. see under *Catta*). *Travaux de la Soc. Sci. Kiev*, 1, p. 101-109, pl. 5.
 1872. Zur Anatomie und Entwicklung von *Thalassema*. *Zeit. wiss. Zool.*, 22, p. 281.
 1876. Du mûle planariforme de la *Bonellie*. (See under *Catta*).
 1889. Ein Beitrag zur Kenntniss der Excretions Organe. *Biol. Centralbl.*, 9, p. 13-17, 65-70, 127-128.
 1901. Sur le genre *Chaetoderma*. *Arch. Zool. expér.* (3), 3, p. 261-283, 3 pl.
- Krohn, A.
 1839. Über das Nervensystem des *Sipunculus nudus*. *Müller's Archiv. Anat. u. Phys.*, p. 318-352.
- Kunstler, J.
 1908a. Que sont les Urnes des Siponcles? *C.R. Acad. Sc. Paris*, 116, p. 196-199, 1 f.
 1908b. Note additionnelle sur les "Urnes" des Siponcles. *C.R. Soc. Biol. Paris*, 61, p. 303-304, 1 f.
- Kunstler, J., and Gruvel, A.
 1897a. Recherches sur l'évolution des Urnes. *C.R. Acad. Sc. Paris*, 121, no. 6, p. 309-312. (Also *Abstr. in Jour. R. mer. Soc. London*, pt. 2, p. 126; and reviewed in *Amer. Nat.*, 31, p. 541-543.)
 1897b. Sur le développement d'éléments particuliers de la cavité générale du Siponcle. *Proc. Verb. Soc. Sci. phys. nat. Bordeaux*, 1896-1897, p. 57-60.
 1898. Nouvelles observations sur quelques stades de l'évolution des Urnes. *C.R. Acad. Sc. Paris*, 126, p. 970-972.
 1899. Recherches sur les "coupes ciliées" der *Phymosoma granulatum*. *Proc. Verb. Soc. Sc. phys. nat. Bordeaux*, 1898-1899, p. 29-32.
- Lacaze Duthiers, H. de.
 1858. Recherches sur la *Bonellie* (*Bonellia viridis*). *Ann. Sc. Nat. Zool.*, (4), 10, p. 50, pl. 1-1.
- Ladreyt, F.
 1903. Sur le rôle de certains éléments figurés chez *Sipunculus nudus* L. *C.R. Acad. Sc. Paris*, 137, p. 865-867.
 1901a. Sur le pigment de *Sipunculus nudus* L. *C.R. Soc. Biol. Paris*, 56, p. 850-852.
 1901b. Sur les urnes de *Sipunculus*. *C.R. Acad. Sc. Paris*, 139, p. 370-371.

- Ladreyt, F. *Concluded*
 1905. Sur les tubes de Poli de Sipunculus nudus L. Arch. Zool. expér. (1), 4, p. CCXV-CCXXII, 4 f.
 1906. Sur certains phénomènes de dégénérescence des globules sanguins dans le hydromeduse de Sipunculus nudus. C.R. Ass. franc. Av. Sc. Sess. 31, p. 601-602.
- Lampert, K.
 1881. Über einige neue Thalassenen. Zeit. wiss. Zool., 39, p. 331-342.
- Lamarek, J. P. B. A. de M.
 1816. Hist. nat. du Animaux Vertébr., 3, p. 65.
- Lanchoesbet, W. F.
 1905a. On a collection of Sipunculids made at Singapore and Malacca. Proc. zool. Soc. London, 1, p. 26-28.
 1905b. On the Sipunculids and Echinurids collected during the "Skeat" Expedition to the Malay Penins., Opusc., p. 35-41, 1 pl.
 1905c. The marine Fauna of Zanzibar and Brit. E. Africa from Coll. by C. Crossland in 1901 and 1902. Gephyrea. Proc. Zool. Soc. London, p. 28-35.
 1908. Sipunculoidea. Nat. Antarctic Exped., 1901-1904. Nat. Hist., 1, p. 1-6.
- Lankester, E. R.
 1873. Zool. observ. made at Naples in the winter of 1871-72. Ann. Mag. Nat. Hist., 11, p. 80.
 1881. On *Thalassena neptuni* Coertner. Zool. Anz., 1, p. 356-356.
 1883. On specimens of the Gephyrean *Hannigia arctica* Kor. and Lam. from the Haulogjerfjord. Ann. Nat. Hist., 5, 11, p. 37-43.
 1885. *Gollingia MacIntoshi* n. sp. Trans. Linn. Soc. London (2), 1, p. 499.
 1908. The related "Frus" of the Sipunculids. Nature, 38, p. 318.
- Lesson, R. P.
 1858. Cent. Zool. 91, pl. 31, f. 2.
- Leuckart, F. G.
 1828. Brev. Annual quorund. descriptioes.
- Leuckart, F. G., and Ruppell, W. P. F.
 1828. Atlas der Reise in Nordl. Afrika.
- Leynson, G. M. R.
 1881. Systematisk geografsk Öfversigt over den mädske Annulata, Gephyrea, Chaetognatha og Balatogbussus. Aids. Medd. 1883 11, p. 92-359, pl. 1-3.
 1887. Kara Havets Lebrme (Annulata). Djuvna-togtets Zoolog. slut. Udbytte, p. 302.
- Leydig, F.
 1861. Vom Bau des thier. Körpers. Tübingen.
- Lefevre, G.
 1905. Artificial Parthenogenesis in *Thalassena melita*. Science, n.s., 21, p. 379.
 1906. Further Observations on Artificial Parthenogenesis. Science, n.s., 23, p. 522-524.
 1907. Artificial Parthenogenesis in *Thalassena melita*. Journ. exper. Zool., 1, p. 91-159, pl. 1-6.
- Linné, K. v.
 1751. *Chimæna Lagerstroemia*, in *Amoen. acad.*, 1, p. 254, etc.
 1758. *Systema Nat.*, ed. 10.
 1766. *Systema Nat.*, ed. 12.
- Lovén, S.
 1815. Öfver K. vet. Akad. Forh., 1811, 1, p. 116, pl. 2.
- Mack, H. von.
 1902. Das Centralnervensystem von *Sipunculus nudus* L. Bachstrang. Mit besonderer Berücksichtigung des Stützgewebes. Eine histol. Untersuchung. Arb. zool. Inst. Wien, 13, p. 237-332, 5 pl., 17 f.
- McCoy, F.
 1815. Contrib. to Fauna of Ireland. Ann. Mag. Nat. Hist., 15, p. 272.
- Macdonald, J. D.
 1871. Structure of *Sipunculus*. Ann. Mag. Nat. Hist., 11, 8, p. 221-223.
- McIntosh, W. C.
 1866. Proc. Royal Soc. Edinb., 5, p. 613.
- Magnus, R.
 1903. Pharmakologische Untersuchungen an *Sipunculus nudus*. Arch. exper. Path. Biol., 50, p. 86-122.
- Maissoneuve, P.
 1889. La faune marine des côtes de Belle-Île. Bibliog. Scient. de l'Ouest.
- Maitland, R. T.
 1851. Fauna Belgii Septent., 1.
 1898. Prodrôme de la faune des Pays Bas et de la Belgique flamande de 1679 à 1898. Leiden.
- Marelli, C. A.
 1912. Notas sobre los Priapulidos y la teoria de la bipolaridad de las especies. Buenos Aires. Bol. Soc. Phys., 1, p. 139-143.

- Marczeller, F. von
1888. Bericht über die Fortschritte auf dem Gebiete der Systematik, Biologie u. Geogr. Verh. de. Platyhel., Chaetogn., Gephyriens, Annulida, Enteropt. u. Rotatorien in 1885-87. Zool. Jahrb., 3, p. 1015.
- Marion, A. F.
1883. Esquisse d'une topographie zool. du golfe de Marseille. Ann. Mus. Hist. Nat. Marseille, 1, p. 73.
1883b. Considérations sur les faune profondes de la Méditerranée. Ann. Mus. Hist. Nat. Marseille, 1, p. 73.
- Martens, G. v.
1824. Fauna Veneta, in Reise nach Venedig, Th. 2.
- Martin
1786. Observ. von Marine Vermes, etc.
- Metalnikoff, S. J.
1896. Das Blut und die Excretionsorgane von Sipunculus nudus. Mitth. zool. Stat. Neapel, 13, p. 130-147.
1900. Sipunculus nudus. Zeitschr. wiss. Zool., 68, p. 261-322, 6 pl.
- Mertensheimer, C.
1851. Über den Bau und das Leben einiger wirbelloser Thiere aus den Deutschen Meeren. Abh. Senckenb. Ges. Frankfurt, 1, p. 6, pl. 1, f. 19.
- Michaelsen, W.
1880. Die Gephyreen von Süd-Georgien nach der Ausleite der deutschen Station von 1882-1883. Jahrb. wiss. Anst. Hamburg, 6, p. 17.
- Mingazzini, P.
1905. Un Gêlinio pelagico. Pelagosplœra Moysi. Atti Accad. Lincei, 11, p. 713.
- Moehius, K.
1875. Jahresber. Kommission. wiss. Untersuch. d. deutschen Meere im Kiel. f. 1872, 1873. V, Vermes. Berlin, 1875.
- Moltschnoff, L. V.
1909a. Nephridies de Phase don spitzbergense Th. Bull. Acad. Sc. St. Petersburg, (6), 2, p. 69-74.
1909b. Beitrag zur Morphologie und Physiologie der Präpudiden. Bull. Acad. Sc. St. Petersburg, (6), 2, p. 957-967, 9 f.
- Montagu, G.
1815. Descriptions of several new rare animals principally marine, discovered on the south of Devonshire. Trans. Linn. Soc. London, 11, pt. 1, p. 21, pl. 5, f. 2.
- Müller, J.
1851. Über verschiedene Formen von Seethieren. Archiv. f. Anat., Phys. u. wiss. Med., p. 69-98.
- Müller, O. F.
1789. Zoologica danica, 3.
- Müller, Max.
1852. Observations anatomiques de verminibus quibusdam marinis. Berlin, p. 11-22, pl. 3, f. 1-12.
- Mueloch, J.
1885. Marine Invertebrates, Gephyrea. Rep. Internat. Polar Exped. Point Barrow, Alaska, p. 156.
- Nickerson, M. L.
1899a. Intracellular canals in the skin of Phasecolosoma. Zool. Jahrb. Abth. Syst., 13, p. 196.
1899b. Intracellular differentiations in gland cells of Phasecolosoma Gouldii. Science, n.s., 9, p. 365.
1901. Sensory and glandular epidermal organs in Phasecolosoma gouldii. Journ. Morphol., 1901, 17, p. 381.
- Nordgaard, O.
1905. Hydrographical and Biological Investigations in Norwegian Fjords. Publ. by Bergen Museum, p. 157-161, 235, 241-245.
- Norman, A. M.
1861. On an Echinoderm new to Science from Ireland. Ann. Mag. Nat. Hist., (3), 7, p. 112-114, pl. 9, f. 1-4.
1894. A month on the Trondhjemfjord. Ann. Mag. Nat. Hist., 13, p. 150.
- Geist, A. S.
1844. De regionibus marinis. Hafniae.
1844-45. Fortegnelse over Dyr sandede i Christiansfjorde. Kroyer's Nat. Tidskr., p. 100-427.
- Olafsen, E., and Povelsen, B.
1772. Reyse igienneen Island.
- Ostroumoff, A. A.
1909. Sur les Gephyries du nord de la Mer du Japon. Ann. Mus. Zool. St. Petersburg, 14, p. 319-324.

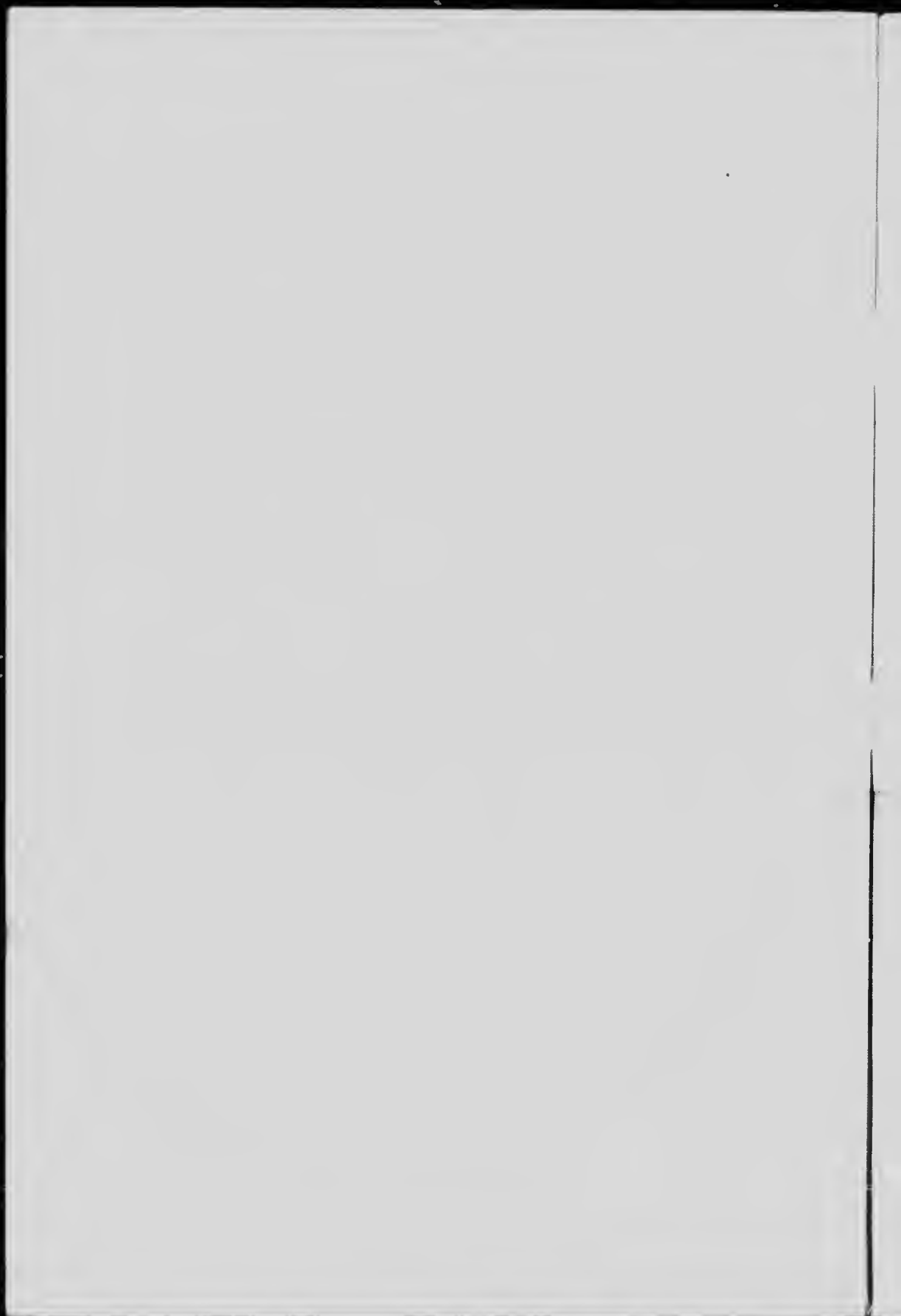
- Packard, A.
1867. Observations on the Glacial Phenomena of Labrador and Maine, with a view of the recent invertebrate fauna of Labrador, Mem. of the Boston Society of Nat. Hist. 1, pt. 2, p. 201, etc.
- Pallas, P. S.
1766. *Miscellanea Zoologica*, 116, pl. 11, f. 1-6.
1774. *Spicilegium Zoologicum*, 1, fasc. 10, pl. 10, f. 1-5.
- Paul, G.
1909. Über *Petalostoma minuta* Keferstein und verwandte Arten, nebst ein. Bemerkungen zur Anatomie von *Ochimesoma steenstrupi*. *Zool. Jahrb., Abth. Anat.*, 29, p. 1-50, pl. 1, 2.
- Pennant, T.
1777. *British Zoology*, 1, p. 31, pl. 29, f. 10.
- Perron, Ed.
1897. *Traité de Zoologie*.
- Peters, W.
1850. Über die Fortpflanzungsorgane des *Sipunculus*. *Archiv f. Anat. u. Physiol.*, p. 592-593.
- Phillips, J.
1851. Notes on living *Prinulus caudatus*. *Rep. Br. Assoc. for 1851. Notes and Abstract*, p. 70-71.
- Pourtales, L. F. de
1851. On the Gephyrea of the Atlantic coast of the United States. *Proc. Am. Ass. Adv. Sc.*, 5th meeting, pp. 39-42.
- Privot, G.
1894. Essai sur la topogr. et la const. des fonds sous-marins de la région de Banyuls. *Archiv. Zool. expér. et gén.*, (3), 2, p. 599.
1895. Coup. d'œil sur la distrib. gén. des Invertébrés de la région de Banyuls. *Op. cit.* (3), 3, p. 629.
1896. Conditions gén. de la vie dans les mers et principes de la distrib. des organismes marins. *Année biog.*, 2, p. 553.
1897. Essai sur les fonds et la faune de la Manche occidentale (côtes de Bretagne) comparés à ceux du golfe du Lion. *Archiv. Zool. expér. et gén.*, (3), 5, p. 511.
- Quatrefages, A. de
1817a. Mémoire sur l'Echiure de Gaertner. *Voyage sur les côtes de la Sicile, etc.*, p. 221, pl. 25, 26; Also in *Ann. Sc. Nat.*, ser. 3, 7, p. 397-343, pl. 6, f. 1-11.
1817b. Etudes sur les types inférieurs de l'enbranchement des Anneles; Mémoire sur l'Echiure de Pallas (*Echinurus Pallasii* Nob.). *C. R. Acad. Sc. Paris*, 23.
1865. Notes sur la classification des Annélides. *C. R. Acad. Sc.*, 10, no. 13, p. 586-600, *Ann. Sc. Nat.*, 3, p. 253-296.
1865b. *Histoire naturelle des Anneles marins et d'eau douce*.
- Rafinesque, Schmalz, C. S.
1814. *Précis des découvertes*.
- Ranzani, C.
1817. *Opuscoli scientifici*, Fasc. 2, p. 112, pl. 1; et *Isis*, 11 and 12, 183.
- Rathke, H.
1813. *Beilage zur fauna Norwegens*. *Nova Act. Phys. med. Acad. C. L. C. Nat. Cur.*, 20, p. 2-264, pl. 1-12.
- Rathke, J.
1806. In Müller, *Zoologica Danica*, 7.
- Reinhardt, J. Th.
1851. *Naturhist. Bidrag til en Beskrivelse af Groenlands*.
- Retzius, G.
1903. Zur Kenntniss der Spermien der Evertebraten. *Biol. Untersuch.*, 11, p. 1-32, pl. 1-13.
- Lietsch, M.
1881. Sur la structure histologique de la trompe de la Bonellie. *Bull. Soc. Philom.*, 7, 8, p. 125-132.
1886. Etude sur les Gephyriens armés. *Recueil Zool. suisse*, 3, p. 311-515, pl. 17-22 (These d. Doct., Paris, 1886).
- Risso, A.
1826. *Hist. nat. Europ. mérid.*, 5.
- Ritchie, J.
1912. The common spoon-worm, *Echinurus Pallasii*, on the coast of Aberdeenshire. *Scottish Naturalist*, p. 69.
- Rohdendorf, L.
1821. *Bonellia viridis*. *Mem. della reale Accad. delle scienze di Torino*, 26, p. 539-551, pl. 14, f. 1-3, pl. 15, f. 5-7.
1823. Neues Thier zur Klasse der Echinodermen. (Transl. of preceding article). *Isis von Oken*, 1, p. 398, pl. 5, f. 1-5.
- Rondelet, G.
1558. *L'hist. entière des poissons*. *Fr. transl. by Joubert*.

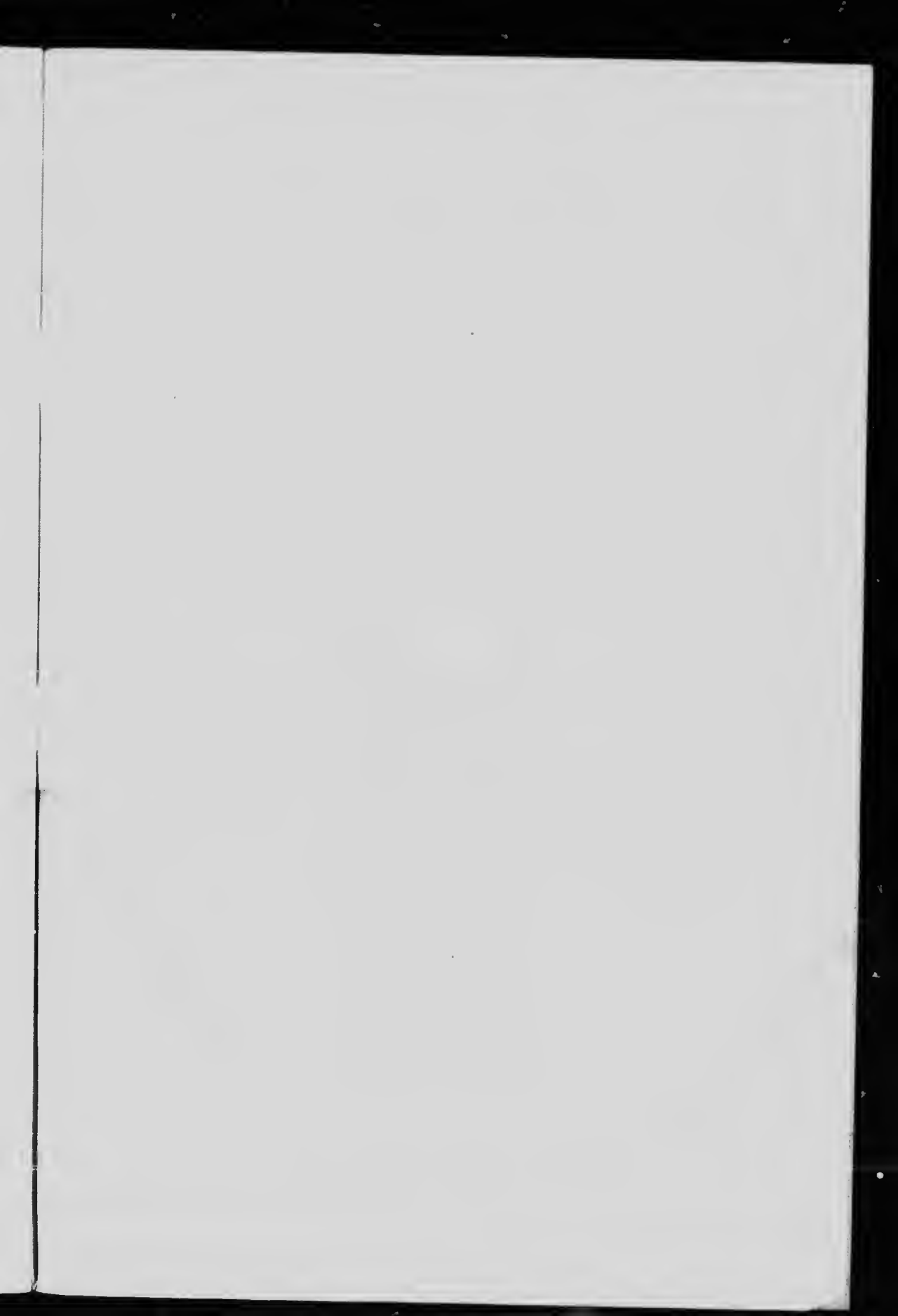
- Rosa, D.
1898. Sur les prétendus rapports génét. entre les lymphocytes et les chlorogènes. Archiv. ital. de Biol., 30, p. 35.
- Roule, I.
1896a. Sur le Développement des Feuilletts Blastodermiques chez les Géphyriens tubicoles. C. R. Acad. Sc. Paris, 110, p. 1147-1149.
1896b. Géphyriens. Résultats scientifiques de la campagne du "Caudan" dans le golfe de Gascogne (août-septembre 1895). Trav. Univ. Lyon. Fasc. 3, p. 473.
1898a. Note préliminaire sur les espèces de Géphyriens nouvelles dans les explorations sous-marines du "Travailleur" et du "Talisman". Bull. Hist. Nat. Paris, p. 381.
1898b. Sur les Géphyriens des grands fonds de la Mer, rec. par le "Travailleur" et le "Talisman". C. R. Acad. Sc. Paris, 127, p. 197-199.
1907. Annélides et Géphyriens. Expéditions scientifiques du "Travailleur" et "du Talisman", 8, p. 1-102, pl. 1-10, Paris.
- Selensky, W. See Selensky, W.
- Sars, M.
1851. Nat. Mag. f. Naturwid., 6, p. 197.
- Scharff, R.
1895. The Skin and Nervous System of Priapulus and Haliertypus. Q. J. Micr. Sc., 25, p. 193-213, pl. 14.
- Schaumsland, H.
1886. Die Exeret u. Geschlechtsorgane d. Priapuliden. Zool. Anz., 9.
1887. Zur Anatomie der Priapuliden. Zool. Anz., 10, p. 171-173.
- Schneck, S. L.
1875. Der grüne Farbstoff von Bonellia viridis. S. B. Akad. Wien., 5, p.
- Schmidt, O.
1851. Über Sipunculiden. Zeits. f. d. ges. Naturwiss., 3, p. 5, pl. 2, f. 5.
- Schmitt, J.
1901. Monogr. de l'Isle d'Anticosti. Thèse Faculté Sc. de Paris, Sorbonne.
- Schneider, A.
1864. Über die Muskeln der Würmer und ihre Bedeutung für das System. Archiv f. Anat. u. Physiol. p. 592, 593.
- Schneider, R.
1912. Die neuesten Beobachtungen über natürlicher Eisensorption in thierischen Zellkernen und einige charakteristische Färbungen der Eisenverwerthung im Körper von Geophyren. Int. Stat. Neapel, 12, p. 207-216, pl. 8.
- Schweigger, A. F.
1820. Handbuch der Naturgeschichte Thiere.
- Sätzl, P.
1907. Der Bau von Echinus chilensis (Urechis n. g.) chilensis. Zool. Jahrb. Abt. Anat., 21, p. 323-356, 3 pl.
- Selenka, E.
1875. Einführung u. Larvenbildung von Plascosoma elongatum Kef., Zeit. wiss. Zool., 25, p.
1878. Das Männchen der Bonellia. Zool. Anz., 1, p. 120-121.
1885. Report of the Geophyrea collected during the voyage of H.M.S. Challenger. Report of sc. results of the explor. voyage of H.M.S. "Challenger", 12.
1888. On the Geophyrens of the Mergui Archipelago, collected for the trustees of the Indian Mus., Calcutta. Journ. Linn. Soc. London, 21, p. 220.
1897. Die Sipunculiden-Gattung Phymosoma. Zool. Anz., 20, p. 460.
- Selenka, E., De Man, J. G., and Bulow, C.
1883. Die Sipunculiden. Reisen im Archipel der Philippinen von Dr. C. Seiner, 2te Theil 4, Abt. 1.
- Selensky, W.
1876. Über die Metamorphose des Echinus. Morphol. Jahrb., 2, p. 319-327, pl. 22.
1905a. Über den Bau des Prototrochs der Echinus. Gen. C. R. 6me Congr. internat. Zool. Berne, p. 338-342.
1905b. Über die Bildung des Mesoblastes bei den Echinuslarven. Op. cit., p. 377-381.
1905c. Morphogenetische Studien an Würmern. I. über den Bau der Echinuslarven. (Trav. Lab. zool. et Stat. biol. Sébastopol, Acad. Sc. St. Petersb. no. 6.) Mem. Acad. Sc. St. Petersb. Cl. phys.-math. (8), 16, no. 11, 102 pp., 10 pl.
1907a. Über die sogenannten Urnen der Sipunculiden (im Russ.). Trav. Soc. Nat. St. Petersb., 38, pt. 1, C. R., 235-237, 3 f.
1907b. Über den Bau und die Entwicklung der sogenannten Urnen der Sipunculiden. Zool. Anz., 32, p. 329-336, 4 f.
1908a. Untersuchungen über die sogenannten Urnen der Sipunculiden. Zeits. Wiss. Zool., 90, p. 536-595, 4 pl., 6 f.
1908b. Über die Metamorphose des Echinus. Bull. Acad. Sc. St. Petersb., (6), 9, p. 307-328, 363-380, 27 f.
- Semper, K.
1864. Reisebericht. Zeits. wiss. Zool. 1864, 14, p. 416-426, pl. 41.

- Scania, A.
 1906. Raccolte planktoniche fatte della R. nave Laguna nel viaggio di circumnavigazione, 1903-1905, 1-2 Sulla struttura di alcune larve (Pelagosphaera) di Sipunculidi Firenze. Pubbl. Ist. Sup., p. 50-78, 2 pl.
 1908. Su una larva di Echinurus (*E. abyssalis*) del plancton di Messina. *Mont. zool. ital.*, 19, p. 38-41, 2 f.
- Sharp, E.
 1908. The Echinoderms of Guernsey. Rep. Trans. Guernsey Soc. Nat. Sci., 5, p. 329-332 (Incl. Sipunculid).
- Shopley, A. E.
 1890a. On a new species of *Phymosoma*. Proc. Camb. Phil. Soc., 7, p. 77-78.
 1890b. On *Phymosoma varians*. Q. J. Mier. Sc., 31, p. 1.
 1891. On a new species of *Phymosoma*, with a synopsis of the genus and some account of its geogr. distrib. Q. J. Mier. Sc., 32, p. 111.
 1892. On *Onchomesoma steenstrupii*. Q. J. Mier. Sc., 31, p. 233-250.
 1893. Notes on the genus *Sipunculid*. Proc. Zool. Soc. London, p. 326-332, pl. 25-27.
 1896. *Gephyrea* and *Phoroms*. Camb. Nat. Hist., 2, p. 109-162, 2 pl.
 1898a. A Report on the Sipunculoida collected by Dr. Willey at the Loyalty Is. and in New Britain. Zool. Results, V. Willey, Pt. 2, p. 151-160, 1 pl.
 1898b. A Report on the Gephyrean worms coll. by Mr. Stanley Gardner at Rotuma and Fimafuti. Proc. Zool. Soc. London, Pt. 3, p. 168.
 1899a. Notes on a Collection of Gephyrean worms found at Christmas Id. by Mr. C. W. Andrews. Proc. Zool. Soc. London, pt. 1, p. 55.
 1899b. On a Collection of Echinoids from the Loyalty Id., etc. Willey's Zool. Results, Pt. 3.
 1902a. Report on the Gephyrea coll. by Prof. Herdman at Ceylon in 1902. Herdman Rep. Pearl Oyster Fishery, Pt. 1, p. 169.
 1902b. Echinuroidea. Fauna and Geogr. Maldives Laccadive Archip., 1, p. 127-130, 1 pl.
 1902c. Sipunculoida, with an account of a new Genus *Lathacosiphon*. Op. cit., 1, p. 131-140, 1 pl.
 1902d. *Gephyrea*. Rep. Coll. nat. Inst. Southern Cross, p. 281-285.
- Skorkow, A. C.
 1901a. Sur la distribution géographique de quelques Priapulidae, Russ. art. in Ann. Mus. Zool. Acad. Sc. St. Petersb., 6, p. XXI-XXIII.
 1901b. Über die Gattung *Hamingia* Kor. et Dan. (Bonellidae). Zool. Anz., 21, p. 158-160, 1 f.
 1902a. Über die geogr. Verbreitung einiger Priapuliden (*Gephyrea*). (Trans. of first article above). Zool. Anz., 25, p. 155-157.
 1902b. *Gephyrea* aus der zool. Ansichte des Eisbrechers "Ermaak" im Sommer 1901. Ann. Mus. zool. Acad. imp. Sc. St. Petersb., 7, p. 271.
 1905. Eine neue Echinurus-Species aus dem Mittelmeer. Zool. Anz., 29, p. 217-221.
 1909. Subfam. Echinurid nov. (*Gephyrea armata*). Du Russ. Ann. Mus. zool. Acad. Sc. St. Petersb., 11, p. 77-102, 1 pl.
 1910. Die Polychaeten und Gephyreen der Ostsee. Ann. mus. zool. St. Petersb., 15, p. 207-236, 2 maps and 6 f.
- Stenter, G. P.
 1882. Notiz über die Segmental-Organen u. Geschlechtsdrüsen einiger Tropischen Sipunculiden. Tijdschr. Nederl. Dierk., 6, p. 1-20, pl. 1.
 1883. Über einige Sternwürmer des indischen Archipels. Zool. Anz., 6, p. 222-228.
 1883-84. Beiträge zur Kenntniss der Gephyreen aus dem Malayischen Archipel., 3 Mitt. Nat. Tijdschr. Nederl. Indie, Batavia, 4, p. 28.
 1886. Beiträge zur Kenntniss der Gephyreen aus dem Malayischen Archipel., 1 Mitt. Op. cit., 1, 3, p. 172.
 1890. Die Evertibraten aus der Sammlung des königlichen naturwiss. Vereins in Niederl. Indien in Batavia. Zugleich eine Skizze der Fauna des Java-Meerces, mit Beschreibung der neuen Arten, Op. cit., 50, p. 102.
 1891. Same title, III, Op. cit., 50, p. 112.
 1897. Gephyreen von Süd-Afrika, nebst Bemerkungen über *Sipunculus indicus*. Zool. Jahrb. Syst., 11, p. 112-150.
 1900. Gephyriens (*Sipunculidés* et *Echinuridés*) provenant des campagnes de l'expédition et de la "Princesse Alice." Résult. des campagnes scientif. Albert Ier., fasc. 15 Monaco.
 1902. Die Sipunculiden und Echinuriden der "Siboga"-Exped. Leiden.
 1912. Gephyriens des campagnes des Yacht "Princesse-Alice" (1898-1910). Résultats des campagnes scientif. du Prince de Monaco, Fasc. 36, p. 1-36.
- Solander, D.
 1786. Nat. Hist. of Zoophytes coll. by J. Ellis, 4, p. 196, pl. 8, f. 6.
- Southern, R.
 1908. British and Irish marine Worms. Irish Nat., 17, p. 83-86.
 1913a. Gephyrea of the Coasts of Ireland. Fisheries Ireland Sci. Investig. 3, p. 1-16, 7 pls.
 1913b. Oligochaeta, Gephyrea and Hirudinea. Proc. R. Irish Acad., 31, pts. 18-50, p. 1-14, 1-6, and 1-6, 2 pl.

- Spengel, J. W.
 1879a. Über die Organization des Echiurus Pallasii. Zool. Anz., 2, p. 542-547.
 1879b. Beiträge zur Kenntniss der Gephyreen I. Die Eibildung, die Entwicklung und das Männchen der Bonellia. Mitt. a.d. zool. Stat. z. Neapel, 1, p. 357-419, pl. 8-12.
 1880. Same title, II. Die Organization des Echiurus Pallasii. Zeits. wiss. Zool., 31, p. 458-538, pl. 23-26.
 1898. Der Name Physicosoma. Zool. Anz., 21, p. 50.
 1907. Eine verkannte Sipunculus-Larve. Zool. Anz., 31, p. 97-99.
 1912a. Beiträge zur Kenntniss der Gephyreen, III. Zum Bau des Kopflappen der armaten Gephyreen. Zeits. wiss. Zool., 101, p. 342-385, 21 pl.
 1912b. Beiträge zur Kenntniss der Gephyreen, IV. Revision der Gattung Echiurus. Jahrb. Abt. Syst., 33, p. 173-212, 1 pl.
 1912c. Einige Organisationsverhältnisse von Sipunculusarten und die Bedeutung für die Systematik dieser Tiere. Verh. zool. Ges., Leipzig, 22, p. 261-272.
 1912d. Über den Hautmuskelschlauch gewisser Thalassema-Arten und seine Bedeutung für die Systematik dieser Tiere. Op. cit., 22, p. 309-317.
 1913. Zur Organisation und Systematik der Gattung Sipunculus. Verh. deutsch. zool. Ges., Leipzig, 23, p. 68-78.
- Spratt, T.
 1848. On the Influence of Temperature upon the distrib. of the Fauna of the Aegean Sea. In London, Edinburgh and Dublin Philos. Mag., 33, p. 171, etc.
- Stewart, F. H.
 1900. Note on a Variation in the Number of Genital Pouches in Thalassema neptuni Gaertner. Ann. Mag. nat. Hist., (7), 6, p. 218-219.
 1909a. Investigator sicarius, a Gephyrean Worm hitherto undescribed, the type of a new order. Mem. Ind. Mus. Calcutta, 1, p. 283-291.
 1909b. The generic name "Investigator"; a correction. Rec. Ind. Mus., 3, p. 183.
- Stimpson, W.
 1853. Marine Invert. of Grand Manan. Smiths. Contrib. to Knowledge, 6, 1854.
 1855. Descrip. of some New Marine Invertebrates. Proc. Acad. Sci. Phil., 7, p. 385-394 (Gephyrea, p. 390.)
 1864. Descriptions of new Species of Marine Invertebrates from Puget Sound. Proc. Acad. Sci. Phil., no. 3, p. 159.
- Stossich, M.
 1882. Prospetto della fauna del mare Adriatico. Parte 1. Boll. Soc. Adriat. Soc. Nat. Trieste, 7, p. 168.
- Studer, Th.
 1879. Thalassema verrucosa sp. nov. Arch. f. Naturg., 45, p. 124.
- Teuscher, R.
 1874. Notiz über Sipunculus und Phascolosoma. Jen. Zeit. Nat., 8, p. 488.
- Théel, H.
 1875. Etudes sur les Gephyriens mernes des Mers de la Scandinavie, du Spitzberg et du Groenland. Bih. till k. Svensk. vet. Akad. Handl., 39, Stockholm, III, no. 6, p. 1.
 1876. Recherches sur le Phascolion Stronchi. Op. cit., III, no. 3, p. 1.
 1905. Northern and arctic Invertebrates in the Collection of the Swedish State Mus. (Riksmus.) I. Sipunculids. K. Svensk. Vet.-Akad. Handl., 39, no. 1, 100p., 15 pl.
 1911. Priapulids and Sipunculids dredged by the Swedish Antarctic Exped., 1901-1903, and the phenomena of bipolarity. Op. cit., 47, no. 1, p. 1-36, pl. 1-1.
- Thiele, J.
 1900. Proneomenia thulensis n. sp. Fauna arctica, 1, p. 111-116, 1 pl.
- Torrey, J. C.
 1902a. The early development of the Mesoblast in Thalassema. Anat. Anz., 21, p. 247-256, 3 f.
 1902b. The Cell-Lineage of the Mesoblast-Bands and Mesenchyme in Thalassema. Science, n.s., 15, p. 576-577.
 1903. The early embryology of Thalassema melita (Conn.). Ann. N.Y. Acad. Sc., 14, p. 165-246, 10 f.
- Turton, W.
 1807. British Fauna.
- Uecküll, J. von Y.
 1896. Zur Muskel und Nervenphysiologie von Sipunculus nudus. Zeit. Biol. (2) 15, p. 1-10.
- Valenciennes, A.
 1854. In C.R. Acad. Sci. Paris, 39, p. 640-643.
- Vejdovsky, F.
 1878. Über die Eibildung und die Männchen von Bonellia viridis. Zeit. wiss. Zool., 30, p. 487-500, pl. 30, Review of same, Rev. Int., 1, p. 722-727, and Arch. Z. exper. 6, p. 16.
- Verrill, A. E.
 1873a. Results of recent dredging Expeditions on the Coast of New England, Amer. Journ. Sc. and Arts, (3), 5, p. 99.

- Verrill, A. E. *Concluded.*
 1873b. Report upon the Invertebrate Animals of Vineyard Sound and adjacent waters. Rep. U.S. Comm. Fish and Fisheries, pt. 1, 1871-72, p. 295-778, pl. 1-38, Washington.
 1871. Explorations of Casco Bay by the U.S.F.C. in 1873. Proc. Am. Assoc. Adv. Sc., p. 340-395, pl. 1-6. Salem.
 1879. Annelids, in L. Kumlien Contrib. to Nat. Hist. of Arctic America, Howgate Polar Exped. Bull. U. S. N. M. 15, p. 141-143.
 1885. Results of the Explorations made by the Steamer *Albatross*, off the northern coast of the U.S. in 1883. Rept. U.S. Comm. Fish and Fisheries, pt. 2, p. 503-727, pl. 1-14, Washington.
 1901a. Additions to the Turbellaria, Nematoda and Annelida of the Bermudas with revision of some N.E. genera and species. Tr. Conn. Acad., 10, ser. 2, p. 595-671, pl. 70.
 1901b. Additions to the fauna of Bermudas from the Yale exped. of 1901, with notes on other species. Op. cit., 11, pt. 1, p. 15-92, pl. 1-11.
- Viguier, W.
 1887. Sur les éléments du liquide de la cavité générale des Sponges. CB. Ass. Fr. Sci. 1886, pt. 2, p. 592-593.
- Vogt, K., and Young, E.
 1888. Anatomie comparée 4, Vermes, p. 200-513.
- Walcott, C. D.
 1911. Middle Cambrian Annelids, Smith. Inst. Misc. Coll., 57, no. 5, p. 109-111, pl. 18-23.
- Ward, H. B.
 1891. On some points in the Anatomy and Histology of *Sipunculus nudus*. L. Bull. Mus. Comp. Zool., 21, no. 3.
- Wharton, L. D.
 1913. A Description of some Philippine Thalassennia with a Revision of the Genus. Philippine J. Sc. 8, p. 243-270, 2 pl. 3 f.
- Whiteaves, J. F.
 1901. Catalogue of Marine Invertebrata of Eastern Canada, No. 772. Geol. Survey of Can., Ottawa, 1901.
- Whitelegge, T.
 1898. The Hydrozoa, Scyphozoa, Actinozoa and Vermes of Funafuti. Mem. Austr. Mus., 3, pt. 7, Vermes p. 392-394.
- Willems-Sidua.
 1876. Briefe an C. Th. E. von Siebold. Zeits. wiss. Zool., 27, p. C11
- Wilson, E. B.
 1899a. The structure of Protoplasm. Biol. Lect. Wood's Hole for 1898, p. 1-20
 1899b. On protoplasmic structure in the eggs of Echinoderms and some other animals. Journ. Morphol. 15, Suppl. O, 1-28, pl. 1 and 2.
- Wilson, C. B.
 1900. Our North-American Echinurids. A Contribution to the habits and Geogr. Range of the Group. Biol. Bull., 1, p. 163-178, 1 pl.





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